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BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
YANG, CLARA I	

ART UNIT	PAPER NUMBER
2635	

DATE MAILED: 10/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/840,827	CHRISTENSEN ET AL.	
	Examiner	Art Unit	
	Clara Yang	2635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 April 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 April 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5,6,7* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitations below must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

- ◊ Claim 1: circuitry of the device and controllers
- ◊ Claim 3: organized data structure of the first memory and its contents (i.e., alphanumeric data relating to each device identifier and groups of device identifiers)

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The abstract of the disclosure is objected to because of the following:

- ◊ The abstract of the disclosure is objected to because of undue length (i.e., 150-word maximum has been exceeded).
- ◊ Line 4: Change "two ways communication" to "two-way communication".

Correction is required. See MPEP § 608.01(b).

3. The disclosure is objected to because of the following informalities:

- ◊ Page 1, line 5: Change "two ways communication" to "two-way communication".
- ◊ Page 1, line 19: Change "MTBF" to "mean time between failure (MTBF)".
- ◊ Page 8, line 13: Change "This also allows controller" to "This also allows the controller".
- ◊ Page 10, line 13: Insert a comma after "data".
- ◊ Page 10, line 31: "organized" is misspelled.
- ◊ Page 14, lines 34 - 35: "a memory in the controllers from factory" is not in idiomatic English.
- ◊ Page 15, line 7: Change "in an alternative" to "In an alternative".

- ◊ Throughout the specification: Change "8 bit" to "8-bit" and change "8bit" to "8-bit".
- ◊ Page 24, line 20: Remove extraneous comma between "Zip" and "gzip".
- ◊ Page 30, line22: Change "these functions" to "These functions".

Appropriate correction is required.

Allowable Subject Matter

4. Claims 11 and 12 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, first paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. The prior art of record fails to teach of suggest a radio frequency (RF) automation system comprising of two RF controllers, wherein each RF controller has a processor that is able to dynamically assign controller identifiers from a predetermined sequence of controller identifiers when additional RF controllers are introduced to the system.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 11 and 12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Though the applicants recite the limitation of claim 11 on page 11 (see lines 9 – 12) and state that "the processor of the second controller may further be adapted to receive said signal and store said indication so as to allow the processor of the second controller to assign the controller or device identifier which is

next in sequence to the last controller identifier assigned by the first controller, to a controller or device" (see lines 25 - 29), the applicants impart on page 14 (see lines 33 - 35) that each controller "has a pre-set unique identifier which is written in a memory in the controllers from factory and which cannot be altered" in order to "[ensure] the uniqueness of the controller identifiers." Here it is understood that the unique identifier is a controller identifier. On page 15, lines 7 - 9, the applicants reiterate that "all controllers...have pre-set unique identifiers...written in memory during fabrication and which cannot be altered." The applicants fail to teach how a controller is able to assign controller identifiers to new controllers when the controllers have permanent controller identifiers.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1, 2, 8, 10, 15 - 17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,909,183 (Borgstahl et al.) in view of U.S. Patent No. 5,802,467 (Salazar et al.).

Referring to Claims 1, 8, 15, and 16, Borgstahl's interactive appliance remote control system comprises a plurality of peers 20, as shown in Fig. 1. Fig. 3 is a list of examples of appliance circuits 48 that may be included in a peer 20; consequently, in addition to being a peer 20, peer 20 may be a personal digital assistant (PDA), a television, a radio, a CD player, etc. (see Col. 6, lines 20 - 30). Borgstahl teaches using a PDA to personalize and/or control nearby appliances (see Col. 7, lines 62 - 66 and Col. 10, lines 42 - 52). Per Borgstahl, network 22 supports an unlimited number of possible connections between peers 20, and virtually any computer or microprocessor-controlled electronic device can be a peer 20 in a peer-to-peer communication network as long as each peer 20 in the network has common communications protocol and/or capability (see Col. 4, lines 2 - 10). In other words, network 22 supports a plurality of controlled peers 20 (such as a television or VCR) and peers 20 that function as controllers, such as controller 300 in Fig. 20. Here it is understood that peers 20 connected to controlled appliances are "devices" and that controlling peers 20, such as controller 300, are "controllers". In Fig. 2, Borgstahl's peer 20 comprises: (a) radio frequency (RF) transmit and receive section 38 for transmitting signals to and receiving signals from other peers 20 (see Col. 4, lines 17 - 23 and 41 - 46; and Col. 5, lines 51 - 54); and (b) processor 40 for controlling transmit and receive section 38 (see Col. 5, lines 54 - 55 and 59 - 61; and Col. 6, lines 12 - 14). Borgstahl imparts that each peer 20 has a unique identifier that allows one peer 20 to be uniquely distinguished from any other peer 20 (see Col. 18, lines 7 - 13), thereby implying that each peer 20 has a first memory for storing its unique identifier. Referring back to Fig. 2,

assuming that peer 20 is connected to an appliance, it is understood that processor 40 provides output signals and/or receives input signals from appliance circuits 48. If peer 20 is a remote controller, such as controller 300 in Fig. 20, Borgstahl imparts that controller 300 has a list of controlled device addresses (i.e., unique identifiers) stored in memory 42 or second memory (see Col. 17, lines 1 - 4). Here it is understood that a list is an organized data structure. Per Borgstahl, controller 300 is able to (1) store and read device addresses in memory 42 and (2) generate a signal containing an address of a selected peer 20 and instructions (see Figs. 21 - 23 and 25; Col. 16, lines 62 - 67; and Col. 17, lines 1 - 17 and 54 - 65). Controller 300, per Borgstahl, is able to operate in two modes: (a) a normal mode in which controller 300 controls a device (see Col. 17, lines 54 - 65) and (b) a learning mode in which control 300 receives and stores new command data (see Col. 17, lines 18 - 27). Though Borgstahl conveys that peers 20 are able to communicate with each other, Borgstahl fails to expressly state that a second controller 300, when in a learning mode, is able to receive and store device addresses transmitted by a first controller 300 and that first controller 300's signal includes a frame instructing the processor of the second controller 300 where to store the device addresses in memory 42 of the second controller 300.

In an analogous art, Salazar's remote control system, as shown in Figs. 1a and 1b, comprises of a plurality of apparatuses 2 - 9 and 11, each having a radio frequency (RF) and/or infrared (IR) transceiver, a base station 25 or first controller, and a handset 10 or second controller. Both base station 25 and handset 10 are able to control and monitor the external apparatuses (see Col. 6, lines 31 - 38). Base station 25, as shown in Fig. 5, comprises: (a) RF transceiver 160; (b) external memory 145; and (c) microprocessor 200. Handset 10, as shown in Fig. 3, comprises: (a) RF transceiver 60; (b) external memory 32; and (c) microprocessor 30. Per

Salazar, microprocessor 30/200 creates a generalized command and control protocol that enables handset 10/base station 25 to interact with any number of external devices that have compatible transceivers (see Col. 7, lines 14 - 25; Col. 22, lines 36 - 38 and 46 - 50; and Col. 23, lines 1 - 5). Furthermore, external memory 32/145 stores programs and data for controlling the handset/base station and for executing other software applications (see Col. 2, lines 47 - 50; Col. 8, lines 22 - 30; and Col. 22, lines 46 - 50). Because Salazar states that updated databases and/or accessory programs can be loaded into the external memory of base station 25 and handset 10 via a telephone line or wireless communications (see Col. 2, lines 47 - 50 and Col. 7, lines 26 - 30), it is understood that base station 25 is able to receive updated databases and software via telephone line interface 310 and store the updated databases and software in memory 32's organized data structure. Furthermore, because handset 10 and base station 25 are able to communicate with each other directly (see Col. 6, lines 43 - 47), it is understood that base station 25 is able to send updated databases and software to handset 10. Though Salazar omits expressly stating that base station 25's signal to handset 10 includes a frame instructing handset 10's microprocessor 30 where to store the device addresses in memory 32, the Examiner takes Official Notice that the method of instructing the processor of a device as to where to store data is well known. Consequently, it would have been obvious to one of ordinary skill in the art at the time the invention was made such that base station 25's signal to handset 10 includes a frame instructing handset 10's microprocessor 30 where to store the device addresses in memory 32 since the Examiner takes Official Notice that the method of instructing the processor of a device as to where to store data is well known and ensures that base station 25 and handset 10's organized data structures have the same content in the same locations, thereby facilitating

data updates and enabling both controllers to perform substantially the same functions (see Figs. 2 and 4 and Col. 22, lines 36 - 38).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the first and second controllers of Borgstahl as taught by Salazar such that (1) the first controller is able to transmit data files along with a frame instructing a second controller's processor as to where the data files are to be stored, and (2) the second controller is able to receive data files from a first controller and store the data files in memory 42's organized data structure as specified by the first controller, because it is much easier for the first controller to update specific databases within the second controller if the organized data structures of both controllers contain the same content in the same locations, thus ensuring that both controllers are able to perform substantially the same functions.

Regarding Claim 2, Borgstahl imparts that when a peer 20 needs to establish communication with other peers, peer 20 broadcasts a need/capability message 64 having a format as shown in Fig. 7. Need/capability message 64 includes an ID 66 for peer 20 that is broadcasting the message (see Col. 7, lines 40 - 48). Per Borgstahl, ID 66 is unique so that it may be used in an addressed service connection when broadcasting peer 20 successfully establishes communication with other peers 20 (see Col. 7, lines 45 - 48), thus implying that broadcasting peer 20's unique identifier (as indicated by ID 66) is stored in the other peers that are communicating with broadcasting peer 20.

Regarding Claims 10, 17, and 19, Borgstahl omits teaching that a second controller 300 is able to receive and store device addresses transmitted by a first controller 300 and that processor 40 of the second controller is able to overwrite all information in its memory corresponding to the device addresses received from the first controller. In addition, Borgstahl

is silent on a first controller 300 sending a signal to a second controller 300, wherein the signal comprises instruction related to the setup and operation of the system.

As explained above in Claim 1, Salazar teaches a handset 10 (second controller) that is able to receive and store database updates and programs transmitted by base station 25 (first controller). Because base station 25 and handset 10 both control system 1 and perform the same functions (see Col. 22, lines 36 - 38), it is understood that the programs transmitted by base station 25 to handset 10 include instructions related to the setup and operation of the system (see Col. 2, lines 47 - 50). Salazar fails to disclose that microprocessor 30 of handset 10 is able to overwrite all information in memory 32 relating to the updated control data received from the base station 25. However, the Examiner takes Official Notice that processors with the ability to replace or overwrite existing data with new data are well known. Consequently, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Salazar's microprocessor 30 such that it is able to overwrite all information in memory 32 relating to the updated control data received from the base station 25 since the Examiner takes Official Notice that processors with the ability to replace or overwrite existing data with new data are well known and allow only specific databases to be modified, thereby improving efficiency and decreasing processing time.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the first and second controllers of Borgstahl as taught by Salazar such that a second controller 300 is able to receive and store device addresses transmitted by a first controller 300 and that processor 40 of the second controller is able to overwrite all information in its memory relating to the device addresses received from the first

controller, which reduces processing time by updating only the specified database and ensures that both controllers are able to perform substantially the same functions.

10. Claims 3 - 6, 9, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,909,183 (Borgstahl et al.) and U.S. Patent No. 5,802,467 (Salazar et al.) as applied to claim 1 above, and further in view of U.S. Patent No. 6,104,334 (Allport).

Regarding Claim 3, Borgstahl and Salazar's controller 300, as shown in Fig. 20, has a display 303 for showing the alphanumeric representation of a controlled peer 20's unique identifier/address, a display 307 for showing the alphanumeric representation of a command code that is to be transmitted to the controlled peer, and a display 309 for showing icons 311 that correspond to available commands for the controlled peer (see Col. 16, lines 22 - 32). Here it is understood that the alphanumeric representation of unique addresses and command codes are stored in an organized data structure, such as a database, which is well known to those of ordinary skill in the art. In addition, controller 300, as modified by Salazar, is able to transfer it databases to another controller 300 as explained above in Claim 1. Borgstahl and Salazar, however, fail to teach that controller 300 stores alphanumeric representation of groups of device identifiers.

In an analogous art, Allport teaches a remote control to control various consumer appliances made by various manufacturers (see Abstract). Referring to Fig. 18, which is a high-level schematic of the hardware used in Allport's remote control 10, remote control 10 comprises: (a) hardware for RF communication (see Col. 27, lines 49 - 51); (b) flash ROM 625 for storing command libraries (see Col. 27, lines 25 - 26 and Col. 28, lines 31 - 36); (c) working memories DRAM 615 and SRAM 62 (see Col. 28, lines 31 - 36); and (c) central processing unit (CPU) 605 and IO-ASIC 630 for controlling data transmission and reception (see Col. 27, lines 9

- 10 and 33 - 61). Allport's remote control 10 has an "update system" with an option to allow remote control 10's current settings to be saved onto another remote control 10 (see Col. 23, lines 14 - 18). Here it is understood that remote control 10's current settings include the list of identifiers for each device to be controlled, the device type, the table of commands for each device, and the associated data such as the representation of the commands on remote control 10's display (see Col. 8, lines 6 - 12). As indicated in Fig. 3, Allport teaches grouping controlled devices into three groups: pictures (e.g., DVD, satellite box, TV, VCR, etc.), music (e.g., phonograph, tape player, CD player, radio, etc.), and other (e.g., kitchen appliances, security system, a baby monitor, etc.) (see Col. 9, lines 21 - 24 and 58 - 65). Here it is understood that "pictures", "music", and "other" are alphanumeric data relating to groups of controlled devices.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the first and second controllers of Borgstahl and Salazar as taught by Allport because grouping the devices based on the physical source of entertainment, such as "pictures" or "music", presents information to the user in a manner related to how the user thinks, thereby making the controllers more user-friendly (see Allport, Col. 9, lines 21 - 34).

Regarding Claims 4 and 5, as mentioned above in Claim 3, Borgstahl's controller 300, as modified by Salazar, contains alphanumeric representation of unique addresses for peers 20 of appliances to be controlled as well as command codes for controlling each appliance via peer 20. Because peer 20 only responds to controller 300's commands when both devices are within communication range and peer 20 receives a command from controller 300 that contains peer 20's unique address/identifier (see Borgstahl, Col. 9, lines 36 - 40; Col. 17, lines 9 - 17 and 54 - 65), it is understood that the alphanumeric representation of a peer 20's unique address (see Borgstahl, Fig. 20, display 303) characterizes the operation of peer 20 that corresponds to the

appliance to be controlled. Furthermore, because Borgstahl and Salazar's controller 300 is able to control an appliance associated with a peer 20, as explained above in Claim 1, it is understood that the alphanumeric representation of a command code, as shown on display 307 in Fig. 20, characterizes the operation of the appliance connected to peer 20.

Regarding Claim 6, Borgstahl and Salazar teach that peer 20, in addition to being a peer, is also a VCR (see Borgstahl, Fig. 20, VCR address). Though Borgstahl and Salazar are silent on controller 300 comprising predetermined routines related to the dynamic operation of the VCR over a period of time, the Examiner takes Official Notice that programming a VCR to record a particular television show at a particular time (i.e., dynamic operation) is well known to those of ordinary skill in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Borgstahl and Salazar's controller 300 such that the alphanumeric representation of commands further include those causing a VCR to select the desired channel, begin recording at a specified time, and stop recording at a specified time since the Examiner takes Official Notice that a remote controller with the ability to program a VCR such that it records a particular television show at a particular time (i.e., dynamic operation) is well known to those of ordinary skill in the art and enhances the functionality of the remote control system.

Regarding Claims 9 and 18, Borgstahl and Salazar's second controller is able to receive and store database updates transmitted by a first controller as explained in Claim 1. Borgstahl and Salazar, however, fail to expressly state that the second controller's processor is able to delete all device identifiers in its memory prior to storing the device identifiers transmitted by the first controller.

Allport's remote control 10 provides a user the option to delete an old device from the device known to remote control 10 (see Col. 22, lines 19 - 21). Here it is understood that a user is able to cause remote control 10's CPU 605 delete information of all known devices by using this option.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Borgstahl and Salazar's second controller as taught by Allport because the process of deleting all device identifiers in the second controller prior to receiving device identifiers from the first controller results in both controllers being able to control identical devices, which is desirable in a household having multiple users.

11. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,909,183 (Borgstahl et al.) and U.S. Patent No. 5,802,467 (Salazar et al.) as applied to claim 1 above, and further in view of U.S. Patent No. 6,275,166 (del Castillo et al.).

As explained above in Claim 1, Borgstahl's controller 300, as modified by Salazar, is able to transmit organized data structures (i.e., a databases) to a second controller 300, wherein the second controller 300 stores the received databases in memory 42. Borgstahl and Salazar also teach the relaying information between peers 20 that are unable to directly communicate is possible by establishing communication links with an intermediate peer 20 (see Col. 5, lines 26 - 30). Borgstahl and Salazar, however, omit teaching that controller 300's memory contains a routing table indicating the other peers to which each peer 20 is able to transmit signals.

In an analogous art, del Castillo teaches, as shown in Fig. 2, an RF remote appliance control/monitoring system comprising: (a) a distributed array of appliance management stations (AMSs) 12 or devices, wherein each AMS 12 is interfaced to one or more appliance devices 24 (see Col. 4, lines 1 - 4 and 52 - 61); and (b) headend control station (HCS) 14 or

controller. HCS 14, as shown in Fig. 1, includes: (a) headend transceiver unit (HTU) 18 having an RF transceiver (see Col. 4, lines 26 - 32); and (b) headend control computer (HCC) 16 having a 6 GB hard disk drive (a first memory), a 128 MB RAM (a second memory), and an Intel Pentium® P2 processor (see Col. 4, lines 15 - 25). As shown in Fig. 3 by del Castillo, AMS 12 comprises: (a) a universal relay unit (URU) 20 having an RF transceiver 22 (see Col. 4, lines 52 - 54); (b) an ID tag integrated circuit (IC) 35 or first memory for providing secure and non-volatile storage of a unique serial number (see Col. 5, lines 15 - 17); and (c) CPU 34. Per del Castillo, each URU 20 has a unique identification or serial number, and HCC 16 directs each wireless communication from HTU 18 with a destination address, which corresponds to the serial number of a particular URU 20, and relay addresses, which correspond to the serial numbers of other URUs 20 located in between, if necessary (see Col. 5, lines 1 - 12), thereby implying that HCC 16 has a routing table.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the first and second controllers of Borgstahl and Salazar as taught by del Castillo because a routing table enables a controller to determine the best way to route data to the desired destination device, thereby improving the efficiency of the system.

12. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,909,183 (Borgstahl et al.) and U.S. Patent No. 5,802,467 (Salazar et al.) as applied to claim 1 above, and further in view of U.S. Patent No. 5,305,355 (Go et al.) and U.S. Patent No. 5,541,670 (Hanai).

Regarding Claims 13 and 14, Borgstahl and Salazar's first and second controllers are unable to dynamically assign device addresses to a device upon introduction of the device to

the system, and the processor of the first controller is unable to transmit to the second controller a signal indicating which device identifier has been assigned.

In an analogous art, Go teaches an equipment control system comprising a plurality of master units or master controllers 101B and 101'B (see Fig. 35) and a plurality of slave units 102-$_1$B ~ 102-$_n$B or devices, wherein the slave units include a cassette tape deck, a radio tuner, a compact disc (CD) player, a television tuner, etc. (see Col. 1, lines 18 - 23). Per Go, each slave device comprises: (a) a receiver and transmitter for exchanging signals with master units 101B and 101'B via bus 103 (see Col. 25, lines 22 - 27); (b) a memory 104B for storing an assigned address (see Col. 25, lines 50 - 55); and (c) a connection request unit 105B or processor for controlling the transmission and reception of signals (see Col. 25, lines 27 - 32 and 39 - 43). Master units 101B and 101'B have: (a) a receiver and transmitter for exchanging signals with slave units 102-$_1$B ~ 102-$_n$B via bus 103 (see Col. 25, lines 22 - 27 and Col. 27, lines 4 - 8); and (b) communication address setting unit 106B, which is understood to be a processor because it generates addresses for slave units (see Col. 25, lines 44 - 49). Since master units 101B and 101'B are able to avoid assigning duplicate addresses (see Col. 25, lines 32 - 38), it is understood that master units 101B and 101'B have (c) at least one memory for storing assigned addresses and are both able to assign addresses to slaves. Go is silent on master units 101B and 101'B assigning slave addresses using a predetermined sequence of addresses and that master unit 101B transmits an indication to master unit 101'B which address has been currently assigned.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the master units or first and second controllers of Borgstahl and Salazar as taught by Go enabling the controllers to assign device identifiers eliminates

mistakes, such as duplicate addresses, created by manual address setting (see Go, Col. 3, lines 35 - 50).

In an analogous art, Hanai teaches an equipment control system having a plurality of master equipment and slave equipment. In the example shown in Fig. 4, VCR 2 is set as master 1, i.e., a master with the highest priority; television receiver 5 is set as master 2; cable box 1 is set as a slave; and connector 6 is set as a slave. Cable box 1 and connector 6, which are understood to be devices, each comprises: (a) a receiver and transmitter for communicating with VCR 2 and/or television receiver 5 via cable 4 (see Col. 6, lines 5 - 12); (b) memory (RAM 14 for cable box 1 and RAM 65 for connector 6); and (c) a processor (control microcomputer 13 for cable box 1 and control microcomputer 64 for connector 6). VCR 2 and television receiver 5, which are understood to be controllers, each has: (a) a receiver and transmitter for communicating with cable box 1 and/or connector 6via cable 4 (see Col. 6, lines 5 - 12); (b) memory (RAM 24 for VCR 2 and RAM 54 for television receiver 5); and (c) a processor (control microcomputer 21 for VCR 2 and control microcomputer 51 for television receiver 5). As shown in Figs. 5, 9, and 11, when the master having the highest priority assigns addresses to each device, the addresses are assigned using a predetermined sequence of addresses. In addition, Hanai specifies that after assigning an address to each device in the audio-video (AV) system, the master unit's microcomputer stores the assigned addresses in RAM 24 and transmits to the microcomputer of master devices 2, or 3, or 4, the address assignment data along with the categories and types of the devices (see Col. 6, lines 24 - 28).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the master units or first and second controllers of Borgstahl, Salazar, and Go as taught by Hanai because having the first controller transmit to the second

controller an indication of the currently assigned addresses prevents the second controller from assigning duplicate addresses, thereby avoiding communication problems amongst the controllers and devices.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- ◊ U.S. Patent No. 5,537,104 (Van Dort et al.): Van Dort teaches a control system comprising a plurality of equipment and actuator units, each having a unique address.
- ◊ U.S. Patent No. 5,614,906 (Hayes et al.): Hayes teaches a remote control that has a command table or organizes data structure.
- ◊ U.S. Patent No. 5,797,085 (Beuk et al.): Beuk teaches a system having a plurality of wireless controllers that are able to communicate with each other.
- ◊ U.S. Patent No. 5,959,539 (Adolph et al.): Adolph teaches a remote control having a list of device addresses.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clara Yang whose telephone number is (703) 305-4086. The examiner can normally be reached on 8:30 AM - 7:00 PM, Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached on (703) 305-4704. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

CY
20 October 2003

BRIAN ZIMMERMAN
PRIMARY EXAMINER